

IN THE CLAIMS

1-7 (Canceled)

8. (new) A method for applying manganese phosphate layers to iron or steel surfaces comprising contacting workpieces with a phosphating solution comprising

- 0.2 to 4 g/l of iron (II) ions
- 10 to 25 g/l of manganese ions
- 25 to 50 g/l of phosphate ions (calc. as P₂O₅)
- 3 to 35 g/l of nitrate ions
- 0.5 to 5 g/l of nitroguanidine

said solution having 7 to 24 points of free acid, 50 to 140 points of total acid, and an S value of 0.2 to 1, and drying the workpieces to form a manganese phosphate layer having a minimum thickness of 2 µm and an average maximum roughness depth (R_z) of from 1.3 to 2.5 µm.

9. (new) The method according to claim 8, wherein said phosphating solution that comprises 0.5 to 2 g/l of nitroguanidine.

10. (new) A method according to claim 8, wherein the phosphating solution comprises not more than 2.5 g/l of iron (II) ions.

11. (new) A method according to claim 8, wherein the workpiece is steel and said phosphating solution comprises a complex-forming agent for the alloying constituents of the steel.

12. (new) A method according to claim 11, wherein said coupler-forming agent is citric acid.

13. (new) A method according to claim 8, wherein said phosphating solution further comprises at least one metal ion selected from the group consisting of

0.2 to 4 g/l of nickel ions and

0.2 to 4 g/l of magnesium ions.

14. (new) A method according to claim 8, wherein at least a portion of the manganese ions in said phosphating solution are replaced by manganese carbonate to neutralize free acid.

15. (new) A the method according to claim 8, wherein said workpieces are subjected to a sliding friction.

16. (new) A method according to claim 8, wherein said workpieces are selected from the group consisting of axles, gear mechanism parts and engine pistons.